

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Coram

- 1. Shri Ashok Basu, Chairperson**
- 2. Shri Bhanu Bhushan, Member**
- 3. Shri A.H. Jung, Member**

**Petition No 151/2004
with I.A. 52/2005**

In the matter of

Approval of tariff in respect of Rihand Super Thermal Power Station Stage-I (1000 MW) for the period from 1.4.2004 to 31.3.2009.

And in the matter of

National Thermal Power Corporation Ltd.

.....**Petitioner**

Vs

1. Uttar Pradesh Power Corporation Ltd., Lucknow
2. Jaipur Vidyut Vitran Nigam Ltd, Jaipur
3. Ajmer Vidyut Vitran Nigam Ltd, Ajmer.
4. Jodhpur Vidyut Vitran Nigam Ltd, Jaipur
5. Delhi Transco Limited, New Delhi
6. Haryana Vidyut Prasaran Nigam Ltd, Panchkula
7. Punjab State Electricity Board, Patiala
8. Himachal Pradesh State Electricity Board, Shimla
9. Power Development Department, Govt. of J&K, Srinagar
10. Power Department, Union Territory of Chandigarh, Chandigarh
11. Uttaranchal Power Corporation Ltd., Dehradun ..**Respondents**

The following were present

1. Shri V.B. K. Jain, NTPC
2. Shri I.J. Kapoor, NTPC
3. Shri S.D. Jha, NTPC
4. Shri Rajnesh, NTPC
5. Shri Shankar Saran, NTPC
6. Shri Manoj Saxena, NTPC
7. Ms Pranav Kapoor, NTPC
8. Shri G.K. Dua, NTPC
9. Shri T.P.S. Bawa, OSD (Comml), PSEB
10. Shri V.K. Gupta, Consultant, PSEB
11. Shri S.K. Yadav, JVVNL
12. Shri P.K. Gupta, Jd VVNL

ORDER
(DATE OF HEARING : 30.3.2006)

This petition has been filed by the petitioner, a generating company owned or controlled by the Central Government for approval of tariff in respect of Rihand Super Thermal Power Station, Stage-I (hereinafter referred to as “the generating station”) for the period from 1.4.2004 to 31.3.2009 based on the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations , 2004, (hereinafter referred to as“ the 2004 regulations”).

2. The generating station with capacity of 1000 MW, comprises of 2 units, each with a capacity of 500 MW. Unit -I of the generating station was commissioned on 1.1.1990 and Unit II was declared under commercial operation on 1.1.1991.The tariff for the generating station for the period from 1.4.2001 to 31.3.2004 was approved by the Commission vide its order dated 2.6.2006 in Petition No 38/2001.

3. The tariff petition was originally filed in October 2004. During pendency of the petition, the Commission by its order dated 18.5.2005, in Petition No.172/2004 approved additional capitalisation/de-capitalisation for the generating station for the years 2001-02, 2002-03 and 2003-04. Based on the additional capitalisation / de-capitalisation approved by the Commission, the petitioner filed I.A.No.52/2005 to seek amendment of the original petition and also filed the amended petition. This order is in context of the tariff claimed in the amended petition.

4. The details of the fixed charges claimed by the petitioner in the present petition are given hereunder:

(Rs. in lakh)

Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
Interest on loan	0	0	0	0	0
Interest on Working Capital	2638	2679	2722	2771	2672
Depreciation	8879	8879	8879	8879	623
Advance against Depreciation	0	0	0	0	0
Return on Equity	16707	16707	16707	16707	16707
O & M Expenses (including water charge)	9360	9730	10120	10520	10950
TOTAL	37584	37995	38428	38877	30952

5. The details of Working Capital furnished by the petitioner and its claim for interest thereon are summarised hereunder:

(Rs. in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Coal Stock	5601	5601	5601	5601	5601
Oil Stock	330	330	330	331	330
O & M expenses	780	811	843	877	913
Spares	4962	5260	5576	5910	6265
Receivables	14062	14130	14202	14298	12596
Total Working Capital	25735	26132	26552	27032	26065
Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
Interest on Working capital	2637.84	2678.53	2721.58	2770.78	2671.66

6. In addition, the petitioner has claimed energy charges @ 73 paise/kWh for electricity sent out.

7. The reply to the petition was filed by the Uttar Pradesh Power Corporation Ltd, Jaipur Vidyut Vitran Nigam Ltd, Jodhpur Vidyut Vitran Nigam Ltd, and the Punjab State Electricity Board. The other respondents have not

filed their reply. The petitioner has published notices in accordance with the procedure specified by the Commission. However, no objections or suggestions have been received in response to these notices.

De-capitalization of Assets

8. The petitioner has de-capitalized certain assets during the period 2001-04. By order dated 18.5.2005, these de-capitalised assets were removed from the gross block to arrive at admissible additional capitalization for the purpose of capital cost. These assets broadly fall under two categories viz. items which were capitalised on accrual basis on date of commercial operation and subsequently withdrawn due to non-materialisation and the physical assets which were not in use. As regards the assets which were withdrawn due to non-materialisation, it is observed that the petitioner is maintaining accounts on accrual basis. This resulted in inflated capital base in earlier tariff period due to capitalization of liability provision. The expenditure for which provision was made did not materialise and it was de-capitalised subsequently. But the petitioner has been allowed tariff on the inflated capital base till 31.3.2004. However, past period calculations towards impact on tariff have not been re-opened. The same is to be mutually settled between the petitioner and the beneficiaries. As regards the physical assets which are not in use, 90% of the cost of assets or the cumulative depreciation claimed by the petitioner which ever is less has been reduced from cumulative depreciation recovered till 31.3.2004. Accordingly, adjustment of an amount of Rs 613 lakh, claimed by the petitioner has been allowed.

CAPITAL COST

9. As per the second proviso to Regulation 17 of the 2004 regulations, in case of the existing generating stations, the capital cost admitted by the Commission for determination of tariff prior to 1.4.2004 shall form the basis for determination of tariff.

10. The petitioner has claimed tariff for the period 2004-09, based on the capital cost of Rs 237417 lakh which includes capital cost of Rs 237227 lakh as on 1.4.2001, FERV amounting to Rs 160 lakh and an admitted additional capital expenditure of Rs 30 lakh for the period 2001-04, approved by order dated 18.5.2005.

11. The Commission by its order dated 2.6.2006 in Petition No.38/2001 had admitted a capital cost of Rs 237227 lakh as on 1.4.2001 for the purposes of tariff for the period 2001-04. Also by an order dated 18.5.2005, in Petition No. 172/2004, the Commission had admitted additional capitalisation, excluding FERV, for the period 2001-04 amounting to Rs 30 lakh.

12. Accordingly, the opening capital cost as on 1.4.2004 for the purpose of tariff, excluding FERV for the period 2001-04, is taken as Rs 237257 lakh, provided all the assets which are part of the above capital cost are in use as on 1.4.2004.

13. The petitioner by an affidavit dated 8.2.2006 has affirmed as follows:

“ All the assets included in the Balance sheet of the Rihand STPS for 2003-04, as per details given in Form-12 of the petition were in use as on 1.4.2004. The assets that will be out of use in the tariff period 2004-09, will be de-capitalised and the details of such assets not in use / amounts de-capitalised shall be furnished to the Commission along with the claims of capitalisation to be filed in line with the CERC (Terms and conditions of Tariff) Regulations, 2004.”

14. In view of the above, the capital cost for the purpose of tariff, as on 1.4.2004 is Rs 237257 lakh , excluding FERV for the period 2001-04 and the same is allowed.

FERV/ Extra Rupee liability during the years 2001-04

15. Regulation 1.13 (a) of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2001 provided as under:

(a) Extra rupee liability towards interest payment and loan repayment actually incurred, in the relevant year shall be admissible; provided it directly arises out of foreign exchange rate variation and is not attributable to Utility or its suppliers or contractors. Every utility shall follow the method as per the Accounting Standard-11 (Eleven) as issued by the Institute of Chartered Accountants of India to calculate the impact of exchange rate variation on loan repayment

(b) Any foreign exchange rate variation to the extent of the dividend paid out on the permissible equity contributed in foreign currency, subject to the ceiling of permissible return shall be

admissible. This as and when paid, may be spread over the twelve-month period in arrears

16. Regulation 1.7 of the 2001 regulations further provided that recovery of foreign exchange rate variation would be done directly by the utilities from the beneficiaries without filing a petition before the Commission. In case of any objections by the beneficiaries to the amounts claimed on these counts, they may file an appropriate petition before the Commission.

17. The petitioner has claimed FERV in the instant petition as follows :

(Rs in lakh)

Year	2001-02	2002-03	2003-04	Total
FERV	(-) 12	170	2	160

18. The petitioner's claim for capitalization of Rs.160 lakh on account of FERV is based on the actual loan outstanding. The petitioner has submitted that its entitlement to FERV is to be admitted in view of clause 1.13 (a) of the 2001 regulations because it has "actually" incurred extra rupee liability towards interest payment and loan repayment in foreign currency.

19. The Commission had earlier considered this aspect in Petition No 160/2004, filed by the petitioner and observed as follows :

" We have very carefully considered the petitioner's claim. For determination of tariff of the generating station normative debt-equity ratio of 50:50 is being considered since 1992, irrespective of debt and equity actually employed. It appears that in this case actual loan was more than the normative loan, and actual equity less than the normative equity. The actual as well as normative loan has been repaid through tariff in 2003-04, but the amount of actual loan, which includes foreign currency loan is more than the normative loan as per the books of accounts of the petitioner..."

..” We do not find enough justification for the petitioner's claim. Capitalisation of FERV should be admissible on the outstanding normative loan, which is the basis for

computation of tariff. Once the normative loan is repaid partly or wholly by its claim through tariff, the respondents' liability to repay interest on loan (including foreign currency loan) gets reduced or extinguished. The petitioner is being allowed return on notional equity of 50% for more than one decade, which far exceeds return on actual equity. This accelerated amount of return on equity will be admissible to the petitioner through out the life of the generating station. This more than compensates the petitioner for the loss, if any, on account of FERV. If the matter is viewed from that angle, heartburn should be less “.

20. It has been noticed in the present case that the capital cost of the generating station as claimed by the petitioner as on 31.3.2004, is Rs. 237417 lakh, against which the petitioner has indicated actual loan totaling to Rs 160529 lakh. Thus the actual equity works out to Rs 76888 lakh. On the contrary, the petitioner has claimed return on notional equity of Rs 118708 lakh. Therefore, actual equity is far less than the notional equity on which return is allowed. Accordingly, the decision in Petition No. 160/2004 squarely applies to the facts of the present case. In the present case, normative loan was fully liquidated on 31.10.1997. Hence, the question of capitalisation on account of FERV should not arise.

21. The opening capital cost as approved by the Commission as on 31.3.2004, in order dated 2.6.2006, in Petition No.38/2001 and the additional capitalisation approved by the Commission for the tariff period 2001-04, by order dated 18.5.2005, in petition 172/2004, have been considered for working out the opening capital cost as on 1.4.2004, for the tariff period 1.4.2004 to 31.3.2009, as shown below:

(Rs in lakh)	
Capital cost as on 31.3.2004 as admitted by the Commission in previous tariff period	237227
Additional capitalisation during 2001-04 approved by the Commission	30

FERV for the period 2001-04 as calculated on normative loan	0
Capital cost as on 1.4.2004 for the period 2004-09	237257

DEBT-EQUITY RATIO

22. Clause (1) of Regulation 20 of the 2004 regulations *inter alia* provides that in case of the existing generating stations, debt–equity ratio considered by the Commission for fixation of tariff for the period ending 31.3.2004 shall be considered for determination of tariff.

23. Ministry of Power, while notifying tariff had considered the normative debt-equity ratio of 50:50. The Commission also, while approving tariff vide its order dated 2.6.2006, in Petition No 38/2001 for the period from 1.4.2001 to 31.3.2004, had considered the normative debt-equity ratio of 50:50. Therefore, for the purpose of present petition, debt-equity ratio of 50:50 has been adopted in the working. Accordingly, an amount of Rs. 118628 lakh is allowed as equity, as on 1.4.2004.

TARGET AVAILABILITY

24. The petitioner has considered target availability of 80%, based on the provisions of the 2004 regulations. Accordingly, target availability of 80 % has been considered for recovery of full fixed charges and computation of fuel element in the working capital for the period from 1.4.2004 to 31.3.2009.

RETURN ON EQUITY

25 As per clause (iii) of Regulation 21 of the 2004 regulations, return on equity shall be computed on the equity base determined in accordance with

regulation 20 @ 14% per annum. Equity invested in foreign currency is to be allowed a return in the same currency and the payment on this account is made in Indian Rupees based on the exchange rate prevailing on the due date of billing.

26. The petitioner has claimed return on equity @ 14%. The return on equity has been worked out on the normative equity of Rs.118628 lakh. The charges payable by the respondents on account of return on equity work out to Rs.16608 lakh each year during the tariff period.

INTEREST ON LOAN

27. Clause (i) of regulation 21 of the 2004 regulations *inter alia* provides that,-

(a) Interest on loan capital shall be computed loan-wise on the loans arrived at in the manner indicated in regulation 20.

(b) The loan outstanding as on 1.4.2004 shall be worked out as the gross loan as per regulation 20 minus cumulative repayment as admitted by the Commission for the period up to 31.3.2004. The repayment for the period 2004-09 shall be worked out accordingly on normative basis.

(c) The generating company shall make every effort to swap the loan as long as it results in net benefit to the long-term transmission customers. The costs associated with such swapping shall be borne by the long-term transmission customers.

(d) The changes to the loan terms and conditions shall be reflected from the date of such swapping and benefits passed on to the beneficiaries.

(e) In case any moratorium period is availed of by the generating company, depreciation provided for in the tariff during the years of moratorium shall be treated as repayment during those years and interest on loan capital shall be calculated accordingly.

(f) The generating company shall not make any profit on account of loan and interest on loan.

28. The petitioner has not claimed interest on loan. Accordingly, the petitioner's entitlement to interest on loan is 'nil'.

DEPRECIATION

29. Sub-clause (a) of clause (ii) of Regulation 21 of the 2004 regulations provides for computation of depreciation in the following manner, namely:

(i) The value base for the purpose of depreciation shall be the historical cost of the asset.

(ii) Depreciation shall be calculated annually based on straight line method over the useful life of the asset and at the rates prescribed in Appendix II to these regulations. The residual life of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the historical capital cost of the asset. Land is not a depreciable asset and its cost shall be excluded from the capital cost while

computing 90% of the historical cost of the asset. The historical capital cost of the asset shall include additional capitalization on account of Foreign Exchange Rate Variation up to 31.3.2004 already allowed by the Central Government / Commission

(iii) On repayment of entire loan, the remaining depreciable value shall be spread over the balance useful life of the asset.

(iv) Depreciation shall be chargeable from the first year of operation. In case of operation of the asset for part of the year, depreciation shall be charged on pro rata basis.

30. The weighted average rate of depreciation works out to 3.72% as claimed in the petition. In accordance with the 2004 regulations, after the loan is fully repaid, the balance depreciation is to be recovered over the balance useful life of the generating station.

31. As noticed above, the normative loan in case of the generating station is already fully paid. Accordingly, depreciation has been worked out for the remaining useful life of the generating station. Unit I of the generating station was declared under commercial operation with effect from 1.1.1990 and Unit II with effect from 1.1.1991. The useful life of the generating station has been computed as 26 years on weighted average basis. The existing life of the generating station when reckoned from 1.7.1990 (the mid-point of the date of commercial operation of the two units), is 13 years and 9 months as on 31.3.2004. Therefore, the balance useful life of the generating station is 12

years and 3 months as on 1.4.2004. Depreciation chargeable has been worked out accordingly.

32. Depreciation has been allowed at opening gross block of Rs. 237227 lakh. The depreciable value of the generating station is 0.9 (Rs.237227 lakh – Rs.3044 lakh) = Rs.210791 lakh. The accumulated depreciation due to decapitalisation of assets during 2001-04, as stated in paragraph 11 above, is Rs 613 lakh. The cumulative depreciation recovered in tariff up to 31.3.2004 as per order dated 2.6.2006 in Petition No.38/2001 is Rs.161106 lakh, which excludes an amount of Rs 613 lakh adjusted on account of accumulated depreciation on the assets decapitalised. Thus, the balance depreciation recoverable as on 1.4.2004 is Rs.49685 lakh. This amount has been spread over the balance useful life of 12.25 years as on 1.4.2004. The petitioner is entitled to an amount of Rs.4056 lakh each year during the tariff period on account of depreciation. [The necessary calculations are shown below:](#)

Details of Depreciation	(Rs.in lakh)					
	Up to 31.3.2004	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciable value (90% after deducting Land cost)	210791					
Balance useful life of the plant		12.25	11.25	10.25	9025	8.25
Remaining depreciable value at the end of the year	49685	45629	41573	37517	33461	29405
Depreciation		4056	4056	4056	4056	4056

ADVANCE AGAINST DEPRECIATION

33. [As per sub-clause \(b\) of clause \(ii\) of Regulation 56 of the 2004 regulations, in addition to allowable depreciation, the transmission licensee is entitled to Advance Against Depreciation, computed in the manner given hereunder:](#)

AAD = Loan repayment amount as per regulation 56 (i) subject to a ceiling of 1/10th of loan amount as per regulation 54 minus depreciation as per schedule

34. It is provided that Advance Against Depreciation shall be permitted only if the cumulative repayment up to a particular year exceeds the cumulative depreciation up to that year. It is further provided that Advance Against Depreciation in a year shall be restricted to the extent of difference between cumulative repayment and cumulative depreciation up to that year.

35. The petitioner has not claimed Advance Against Depreciation. Therefore, the petitioner's entitlement to Advance Against Depreciation is "nil".

O&M EXPENSES

36. The 2004 regulations, provide the following O&M expense norms for and 500 MW sets and above :

(Rs in lakh /MW)

Year	2004-05	2005-06	2006-07	2007-08	2008-09
O&M expenses for 500MW units	9.36	9.73	10.12	10.52	10.95

37. Based on the above norms, the year wise O&M expenses as claimed by the petitioner for the instant station of 1000 MW capacity are as follows:

(Rs in lakh)

Year	2004-05	2005-06	2006-07	2007-08	2008-09
Annual O&M expenses	9360	9730	10120	10520	10950

38. O & M expenses claimed by the petitioner above are in order and are allowed.

39. In addition, the petitioner had prayed for a specific deviation pertaining to water charges in O&M. The petitioner has submitted that in the past years, the State Governments have been resorting to manifold increase in the rates of water charges / royalty payable, which is not normally based on common commercial principles. Therefore, this increase cannot be covered under the normal O&M expenses allowed in the tariff. The petitioner has, therefore, submitted that any increase in the rates of water charges / royalty etc. by more than 4% per annum over the rates prevailing on 31.3.2004 should be additionally payable by the respondent beneficiaries.

40. The normative O&M expenses were finalized by the Commission after going through the transparent process of hearing and consulting all concerned and were based on the data furnished by the concerned utilities for different components of O&M, including water charges. Further, an escalation of 4% per year is inbuilt in the normative O&M expenses specified by the Commission. There may be other heads in O&M expenses where actual expenses may be less than the normative expenses specified by the Commission. Therefore, we do not consider it to be justified to allow increase under one head, that is, water charges in isolation. As such, recovery of additional O&M expenses on account of any increase in the rates of water charges / royalty etc. during tariff period cannot be allowed. However, the petitioner is at liberty to approach the Commission in accordance with law for recovery of additional water charges with proper justification and details of

actual expenses recovered under other heads, if State Governments resort to abnormal increase in the rates of water charges / royalty during the tariff period.

41. The petitioner has submitted that the wage revision of its employees is due with effect from 1.1.2007. Therefore, O &M expenses should be subject to revision on account of revision of employee cost from that date. In the alternative, it has been prayed that the increase in employee cost due to wage revision be allowed as per actuals for extra cost to be incurred consequent to wage revision. We are not expressing any view, as this issue does not arise for consideration at this stage. The petitioner may approach for a relief in this regard at an appropriate stage in accordance with law.

INTEREST ON WORKING CAPITAL

42. In accordance with clause (v) of Regulation 21 of the 2004 regulations, working capital in case of Coal based/Lignite-fired generating stations shall cover:

- (i) Cost of coal or lignite for 1½ months for pit-head generating stations and two months for non-pit-head generating stations, corresponding to the target availability;
- (ii) Cost of secondary fuel oil for two months corresponding to the target availability;
- (iii) Operation and Maintenance expenses for one month;
- (iv) Maintenance spares @ 1% of the historical cost escalated @ 6% per annum from the date of commercial operation; and

(v) Receivables equivalent to two months of fixed and variable charges for sale of electricity calculated on the target availability.

43. Under the 2004 regulations, the rate of interest on working capital shall be on a normative basis and shall be equal to the short-term Prime Lending Rate of State Bank of India as on 1.4.2004 or on 1st April of the year in which the generating station or a unit thereof is declared under commercial operation, whichever is later. Interest on working capital shall be payable on normative basis notwithstanding that the generating company has not taken working capital loan from any outside agency.

44. Working capital has been calculated considering the following elements:

(a) Coal stock: The petitioner has revised its claim for interest on working capital from July, 2004 onwards urging that the price of coal has increased w.e.f 15.6.2004. As per provisions of the 2004 regulations, interest on working capital has to be frozen as normative number at the beginning of the tariff setting based on the price and GCV of the fuel during preceding three months and prevailing applicable rate of interest and is not to be revised based on subsequent revision of the price of fuel or applicable rate of interest. As such, the prayer of the petitioner to allow interest on working capital based on escalated fuel price w.e.f 15.6.2004 cannot be accepted. The coal stock has been worked out for 1.5 months on the basis of operational parameters given in the 2004 regulations and weighted average price and GCV of coal.

(b) Oil Stock: The oil stock for 2 months as per the operational parameters and weighted average price of oil has been considered. Weighted average price and GCVs of the fuels indicated by the petitioner and those considered in the calculation for fuel component in working capital and base energy charges are as under

(Rs in lakh)

Description	As claimed	As allowed
Coal Price (Rs./MT)	1050.81	1051.65
Coal GCV (Kcal/kg.)	3929	3929
Price of Secondary fuel oil (Rs./KL)	14112.12	14112.12
GCV of Sec. Fuel oil (Kcal./KL)	9650	9650

(c) Secondary Fuel Oil : For secondary fuel oil stock to be provided in the working capital, the value of oil stock for two months corresponding to target availability has been considered. With regard to the cost of fuels, the respondents, Jaipur Vidyut Vitaran Nigam Ltd and Jodhpur Vidyut Vitaran Nigam Ltd, had submitted a certificate issue by the Chartered Accountant of the petitioner, based on PSL register, according to which the average rate of secondary fuel oil for the months of January 2004 to March 2004, was 9734.31 per KL and for coal, the rate was 1060.35/ MT as against Rs 14122.12/KL for oil and 1060.35/MT for coal as claimed by the petitioner. The respondents had submitted that the price of the secondary fuel oil for preceding three months shall be taken as per PSL register for working out the energy charges and the working capital requirements.

A wide difference in prices of secondary fuel oil based on procurement and based on PSL register is on account of the fact that consumption of secondary fuel oil is very low and procurement is done in small quantities

as compared to the stock. On the other hand, there is not much of difference in the prices of coal based on procurement basis and based on PSL register. However, adopting different principles for coal and secondary fuel oil is not appropriate. As such, energy charge and working capital requirements are computed on the latest available procurement price of secondary fuel oil.

Accordingly, the fuel component in working capital works out as follows for the purpose of the tariff, for the period 2004-09.

(Rs in lakh)

Particulars	2004-05	2005-06	2006-07	2007-08 (leap year)	2008-09
Cost of coal for 1.5 months	5605.55	5605.55	5605.55	5620.91	5605.55
Cost of secondary fuel oil for two months	329.66	329.66	329.66	330.56	329.66

(d) **Energy charges** ; The following energy charges for two months is included for the computation of interest on working capital.

(Rs in lakh)

Particulars	2004-05	2005-06	2006-07	2007-08 (leap year)	2008-09
Energy charges for two months	7803.73	7803.73	7803.73	7825.11	7803.73

(e) **O&M Expenses:** O&M expenses for working capital has been worked out for 1 month of O&M expenses approved above are considered in tariff of the respective year.

(f) **Spares:** The petitioner had calculated the value of maintenance spares for the purpose of working capital considering additional capital

expenditure in respective years after the date of commercial operation. Starting with the 1% of historical cost as on the date of commercial operation, the cost of maintenance spares for a particular year has been calculated by the petitioner, by escalating the previous years cost by 6% plus 1% of the additional expenditure of that particular year. The amounts claimed by the petitioner in the I.A., for maintenance spares for interest on working capital calculation are as follows :

(Rs in lakh)

Year	2004-05	2005-06	2006-07	2007-08	2008-09
Amount claimed for maintenance spares	4948	5245	5560	5894	6247

The 2004 regulations do not provide for taking into account additional capital expenditure for working out the cost of maintenance spares for the working capital.

The cost of maintenance spares for the working capital is, therefore, computed on historical cost of Rs 95300 lakh as on the closing date of financial year in which commissioning of the generating station occurred, i.e 31.3.1989. The value of spares as on 1.4.2004 works out to Rs 2284 lakh.

(g) Receivables : Receivables will be equivalent to two months of fixed and variable charges allowed. For this purpose, the supporting calculations in respect of receivables are tabulated hereunder:

(Rs. in lakh)

	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009
Variable Charges					
Coal (Rs/kWh)	0.6993	0.6993	0.6993	0.6993	0.6993

Oil (Rs/kWh)	0.0308	0.0308	0.0308	0.0308	0.0308
Rs./kWh	0.7302	0.7302	0.7302	0.7302	0.7302
Variable Charges per year	46822	46822	46822	46951	46822
Variable Charges -2 months	7804	7804	7804	7825	7804
Fixed Charges - 2 months	5383	5449	5518	5590	5665
Receivables	13187	13252	13322	13415	13469

45. The average SBI PLR of 10.25% has been considered as the rate of interest on working capital during the tariff period 2004-05 to 2008-09, in line with the Commission's earlier decision.

46. The necessary details in support of calculation of Interest on Working Capital are appended below:

Calculation of Interest on Working Capital

(Rs. in lakh)

	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009
Coal Stock	5606	5606	5606	5621	5606
Oil stock	330	330	330	331	330
O & M expenses	780	811	843	877	913
Spares	2284	2421	2566	2720	2883
Receivables	13187	13252	13322	13415	13469
Total Working Capital	22186	22419	22666	22963	23200
Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
Interest on Working capital	2274	2298	2323	2354	2378

ANNUAL FIXED CHARGES

47. A statement containing the details of capital cost and other related details is annexed to this order. The annual fixed charges for the period 1.4.2004 to 31.3.2009 allowed in this order are summed up as below:

(Rs. in lakh)

	Particulars	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009
1	Interest on Loan	0	0	0	0	0
2	Interest on Working Capital	2274	2298	2323	2354	2378
3	Depreciation	4056	4056	4056	4056	4056
4	Advance Against Depreciation	0	0	0	0	0

5	Return on Equity	16608	16608	16608	16608	16608
6	O & M Expenses	9360	9730	10120	10520	10950
	TOTAL	32298	32692	33107	33538	33992

ENERGY/VARIABLE CHARGES

48. The petitioner has claimed the rate of energy charge of 73 paise/kWh based on the operational norms. However the base rate of energy charge works out to 73.02 paise/kWh as per the following computations based on fuel prices and GCVs allowed by the Commission:

Description	Unit	
Capacity	MW	1000.00
PLF corresponding to Availability of 80%	%	80.00
Gross Station Heat Rate	kcal/kWh	2410.00
Specific Fuel Oil Consumption	ml/kWh	2.00
Aux. Energy Consumption	%	8.50
Weighted Average GCV of Oil	kcal/l	9650.00
Weighted Average GCV of Coal	kcal/Kg	3929.00
Weighted Average Price of Oil	Rs./KL	14112.12
Weighted Average Price of Coal	Rs./MT	1051.65
Rate of Energy Charge from Sec. Fuel Oil	Paise/kWh	2.82
Heat Contributed from SFO	kcal/kWh	19.30
Heat Contributed from Coal	kcal/kWh	2390.70
Specific Coal Consumption	Kg/kWh	0.61
Rate of Energy Charge from Coal	Paise/kWh	63.99
Base Energy Charge ex-bus per kWh Energy Sent out	Paise/kWh	73.02

49. The Base Rate Energy Charges (BREC) calculated above are however subject to fuel price adjustment as per the following formula :

$$\text{FPA} = \text{A} + \text{B}$$

Where,

FPA – Fuel price Adjustment for a month in Paise/kWh Sent out

A – Fuel price adjustment for Secondary Fuel oil in Paise/kWh sent out

B – Fuel price adjustment for Coal in Paise/kWh sent out

And,

$$\begin{aligned}
 \mathbf{A} &= \frac{10 \times (\text{SFC}_n)}{(100 - \text{AC}_n)} \left[(P_{om}) - (P_{os}) \right] \\
 \mathbf{B} &= \frac{10}{(100 - \text{AC}_n)} \left[\left\{ (\text{SHR}_n) (P_{cm}/K_{cm}) - (P_{cs}/K_{cs}) \right\} \right. \\
 &\quad \left. - (\text{SFC}_n) \left\{ (K_{om} \times P_{cm} / K_{cm}) - (K_{os} \times P_{cs} / K_{cs}) \right\} \right]
 \end{aligned}$$

Where,

- SFC_n – Normative Specific Fuel Oil consumption in ml/kWh
- SHR_n – Normative Gross Station Heat Rate in Kcal/kWh.
- AC_n – Normative Auxillary consumption in percentage.
- P_{om} – Weighted average price of fuel oil on as consumed basis during the month in Rs./KL.
- K_{cm} – Weighted average gross calorific value of fuel oils fired at boiler front for the month in Kcal/Litre.
- P_{os} – Base value of price of fuel oils as taken for determination of base energy charge in tariff order in Rs./ KL.
- K_{os} – Base value of gross calorific value of fuel oils as taken for determination of base energy charge in tariff order in Kcal/Litre
- P_{cm} – Weighted average price of coal procured and burnt during the month at the power station in Rs. / MT.
- K_{cm} – Weighted average gross calorific value of coal fired at boiler front for the month in Kcal/kg.

- P_{cs} – Base value of price of coal as taken for determination of base energy charge in tariff order in Rs. /MT
- K_{os} – Base value of gross calorific value of coal as taken determination of base energy charge in tariff order in kCal/kg

Impact of additional capitalization for the years 2001-04

50. In petition No 172/2004 filed by the petitioner for approval of revised fixed charges for additional capitalization for the period 1.4.2001 to 31.3.2004, the Commission has decided that additional capital expenditure be added to the gross block as on 1.4.2001 to arrive at gross block as on 1.4.2004 for the purpose of fixation of tariff for the period 2004-05 to 2008-09. The Commission has further ordered that the petitioner would be entitled to earn return on equity @ 16% on equity portion of additional capitalization approved and interest on loan at the rate as applicable during 2001-02 to 2003-04. The return on equity and interest on loan are payable on additional capitalization from 1st April of the financial year following the financial year to which additional capital expenditure relates.

51. Based on the above, the petitioner shall be entitled to recover the following amounts from the respondents through tariff on account of return on equity and interest on loan on account of additional capitalisation on works, in five equal yearly installments, commencing from 1.4.2004, of Rs 24.59 lakh each.

Impact of additional capitalization

(Rs.in Lakh)			
	2001-02	2002-03	2003-04
1. Additional capitalisation during the year vide order dt.18.5.2005 in Petition No.172/2004	706.437	123.741	-800.315
2. Considered for Impact from 1st April of financial year following the financial year to which ACE relates.	0	706.437	830.178
3. Equity 50% as considered in tariff	0	353.2185	415.089
4. Loan	0	353.2185	415.089
5. Actual Rate of Interest		5.00%	6.09%
6. Return on Equity allowed in Order dated 06.11.2003	16%	16%	16%
IMPACT			
(i) Interest on Loan	0	0.00	0.00
(ii) Return on Equity	0	56.51	66.41
Total		56.51	66.41
			122.92

52. The petitioner, in its petition, has mentioned that there had been certain practices, that prevail with the mutual consent of the petitioner and the respondent beneficiaries and which are in slight variation from the provisions of the 2004 regulations. The petitioner had sought approval of the Commission on the specific deviation on levies, taxes and duties :

“ Various taxes, duties, levies, cess, etc imposed by various authorities have been pass through as per various tariff orders / notifications issued by Central Government/ Commission for the tariff period up to 31.3.2004. The BPSA signed with the beneficiaries on 31..1.1994, also provides that such taxes, duties, levies etc are pass through in tariff. The petitioner has craved leave of the Commission to pass on such taxes, duties, levies, etc, as and when paid by it, to the respondents,”

53. We have considered the above. The petitioner is entitled to recover other charges also like incentive, claim for reimbursement of Income-tax, other taxes, cess, etc, levied by a statutory authority and other charges, in accordance with the 2004 regulations, as applicable. However any levies, taxes, duties imposed on any of the components of O&M expenditure norms

shall not be passed through, as these norms already include an escalation factor of 4% per year and normative numbers shall not be revised on account of a component in isolation. This is subject to the orders, if any, of the superior courts.

54. The petitioner vide its affidavit dated 10.3.2006 has submitted that expenditure amounting to Rs. 2,71,010/= has been incurred on publication of notices in the newspapers and .has sought approval for the reimbursement of this expenditure. The petitioner shall claim reimbursement of the said expenditure directly from the respondents in one installment in the ratio applicable for sharing of transmission charges, subject to the petitioner filing an affidavit before the Commission. The petitioner has also sought reimbursement of filing fee of Rs.25 lakh paid. A final view on reimbursement of filing fee is yet to be taken by the Commission for which views of the stakeholder have been called for. The view taken on consideration of the comments received shall apply in the present case as regards reimbursement of filing fee.

55 This order disposes of Petition No 151/2004 and I.A.No. 52/2005.

Sd/-
(A.H. JUNG)
MEMBER

Sd/-
(BHANU BHUSHAN)
MEMBER

Sd/-
(ASHOK BASU)
CHAIRPERSON

New Delhi dated the 19th June 2006

Summary Sheet					
Name of the Company			NTPC Ltd.		
Name of the Station			RIHAND STPS (1000 MW)		
Tariff setting Period			2004-09		
Petition No.			151/2004		
					Rs.in lakh
1	Capital cost of the project as on 1.4.2001				237226.52
2	Additional Capitalisation (works)				30
	2001-02			706.44	
	2002-03			123.74	
	2003-04			(-) 800.32	
	Total			29.86	
3	Additional Capitalisation(FERV)				0.00
	2001-02			0.00	0
	2002-03			0.00	
	2003-04			0.00	
4	Total Capital cost as on 1.4.2004(1+2+3)				237256
5	Means of Finance				
	Debt	50%		118628.19	
	Equity	50%		118628.19	
	Total	100.00%		237256.38	
6	Debt details-Notional Debt (Net) as on 1.4.2004				118628
	Notional debt (Net) as on 1.4.2004				
	Notional debt (Gross i.e 50% of 237227)			118628.19	
	Repayment upto 31.3.2004			163099.00	
	Balance debt			(-) 44470.81	
7	Weighted Average Rate of interest-calculated				
	2001-02	2002-03	2003-04		
	5.50%	5.00%	6.09%		
8	Depreciation recovered upto 31.3.2004				161106
	Recovered upto 31.3.2001			149750	
	1.4.2001 to 31.3.2004			11969	
	FERV impact from 2001-04			0	
	Less accumulated depreciation due to de-capitalisation			(-) 613	
	Total			161106	
9	Balance Depreciation to be recovered beyond 31.3.2009				29405
	Capital cost for the purpose of Depreciation			237227	
	ACE + FERV			30	
	Capital cost as on 1.4.2004			237257	
	Less : Land Cost			3044	
				234213	
	90% of Capital Cost on above			210791	
	Cum. Depreciation to be recovered upto 31.3.2009			181386	
	Balance			29405	

